REMARKS

Reconsideration and allowance of claims 1 - 64 pending in the application are requested.

Claims 21, 41-43, 45-47, and 51-57 have been objected to due to informalities.

Claim 21 is rejected under 35 U.S.C. § 101 because it involves a computer readable medium "including" program code. The claimed invention is directed to non-statutory subject matter.

Claim 58 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failure to particularly point out and distinctly claim the subject matter regarded as the invention.

Claims 1-57 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Miller et al. (US 5,727,002) in view of Vincent Roca and Benoit Mordelet (Improving the Efficiency of a Multicast File Transfer Tool based on ALC), and further in view of R. Brian Adamson and Joseph P. Macker (Quantitative Prediction of NACK-Oriented Reliable Multicast (NORM) feedback).

Applicants have amended claims 1-4, 10, 21-24, 40-45, 51-62 by this amendment. No new matter is introduced in the amendment.

Response To Informalities

Claims 21, 41-43, 45-47, and 51-57 have been objected to due to informalities

Applicant has amended claims 5-6, 21, 41-43, 45-47 and 51-57 to overcome the informalities. Withdrawal of the objections to claims 21, 41-43, 45-47 and 51-57 is requested.

Response To Rejections Under 35 U.S.C. § 101

Claim 21 has ben amended according to the Examiner's suggestion to overcome the rejection under 35 USC 101. Withdrawal of the rejection of claim 21 under 35 USC 101 is requested.

Response To Rejections Under 35 U.S.C. § 112

Claim 58 is rejected under 35 U.S.C. § 112, second paragraph, as not being clear with respect to a memory including processor. Figure 10 and Paragraph 0077 describe a memory incorporating a processor. The electronic dictionary Wikipedia describes "A Processor-in-memory (PIM) as a computer processor tightly coupled to memory, generally on the same silicon chip. Claim 58 is supported in applicants' specfication and in the literature. Withdrawal of the rejection of claim 58 under 35 USC 112, second paragraph is requested.

Response To Rejections Under 35 U.S.C. § 103

A. Claims 1-57, as amended, include elements not disclosed or suggested in (1) Miller et al. (US 5,727,002)(Hereafter, Miller) in view of (2) Vincent Roca and Benoit Mordelet (Improving the Efficiency of a Multicast File Transfer Tool based on ALC)(Hereafter, Roca and Mordelet) and (3) further in view of R. Brian Adamson and Joseph P. Macker (Quantitative Prediction of NACK-Oriented Reliable Multicast (NORM) feedback)(Hereafter, Adamson and Macker), and overcome the rejection under 35 USC 103 (a), as follows:

1. Claim 1, as amended, includes elements (i) – (iv), as follows:

(i) transmitting and scheduling a data packet for delivery from at least one sending device to at least one receiving device at different rates and in different layers using Asynchronous Layered Coding (ALC) with congestion Miller control and Forward Error Coding (FEC);

The Examiner cites Miller at column 17, lines 45-55, as describing the subject matter of element (i). The cited text describes terminals coupled to a multicast IP network operating at different speeds. The terminals are placed in different speed groups, subject to a set frame drop rate. If the terminal frame drop rate exceeds the set drop rate, the terminal must (1) transfer to a lower speed group; (2) leave the group;(3) suppress NACKs until a status message is received from the server, allowing the other speed group devices to finish without being held up by excessive retransmission.

The cited text fails to describe element (i) in at least two respects. First, packets are scheduled for delivery at different rates using ALC with congestion control. Packets have their own rate, as described in applicants' specification at Paragraph 0041 and shown in Figure 4.

Packet are not part of a frame speed group as described in Miller at column 17, lines 45-55. Second, Miller does not disclose or suggest transmitting packets in layer as shown and described in Figures 5A and B of applicants' specification. The Examiner acknowledged in the Interview conducted June 12, 2008 that Miller did not disclose or suggest layered transmission of data packets.

The Examiner further cites Roca and Mordelet at section 4.1-4.3.2 and sections 6.1 through 6.4.3 as describing sending at different rates and different layers using ALC with congestion control and FEC. The Roca and Mordelet publication describes a file transfer tool on top of ALC. An Application Level Framing paradigm for multicast file transfer reduces memory requirements an enable processing to be hidden behind communications. While layered transmission is described Figure 2 of the publication. the Examiner has not identified nor has applicant found in the publication a description of sending data objects or data packets at different scheduled data rates.

Accordingly, Miller and Roca/Mordelet fail to disclose or suggest the subject matter of element (i) transmitting different scheduled data rates for the reasons indicated above.

(ii) determining at said receiving device missing or mangled data transmitted from said sending device for multiple data rates and multiple layers using negative acknowledgement (NACK)-Oriented Reliable Multicast (NORM) protocols at the receiving device;

The Examiner cites Adamson and Macker as describing NORM protocols at a receiver. Adamson and Macker describe NORM protocols for multicast networks. However, applicant can find no disclosure relating to NORM protocols in multicast networks operating at multiple rates and multiple layers as recited in element (ii).

The rejection of element (ii), as amended, is without support in the cited art.

(iii) sending an acknowledgement or transmission of missing or mangled data from said receiving device to said sending device ~~or~~ and to another receiving device; and

The Examiner cites Miller at column 4, line 50 through column 5 line 2 and Figures 1, 10, 12, and 14 as describing element (iii).

The cited text and Figures disclose a receiver sending to the sender an acknowledgement of missing data. In contrast, applicants' specification at Paragraph 64

discloses the receiver sending an acknowledgement of missing data to both the sender and another receiver.

The rejection of element (iii), as amended, is without support in the cited text.

(iv) transmitting a retransmission of said missing or mangled data from said sending device and/or said other receiving device to complete the data packet and a data transmission session.

The Examiner cites Miller at column 4, line 50 through column 5 line 2 and Figures 1 and 2 as describing element (iv). The cited text discloses the sender re-transmitting missing frames to the receivers in response to NACKs and continuing to re-transmit frames until no more frames need to be transmitted. In contrast, applicants' specification at Paragraph 64 and Figure 7D disclose the re-transmissions from the sender and the receivers or the sender or the receiver.

The rejection of element (iv), as amended, is without support in the cited text.

Summarizing, The cited art fails to disclose or suggest (1) scheduled delivery of data packets to receivers at different rates and different layer; (2) determining missing or mangled data at receivers for multiple data rates and multiple layers; (3) sending an acknowledgement from a receiving device to a sending device and to another receiving device, and (4) retransmission of missing or mangled data from a sending device and another receiving device or the sending device or another receiver to complete a data packet and a data transmission session.

The rejection of claim 1 under 35 USC 103 (a) is without support in the cited art. Withdrawal of the rejection and allowance of claim 1 are requested.

2. Claim 21, as amended:

Claim 21 tracks claim 1 in computer readable medium format and is distinguishable from Miller in view of Roca/Mordelet and Adamson/Macker on the same basis as claim 1.

Withdrawal of the rejection of claim 21 under 35 USC 103(a) thereof are requested.

3. Claim 40, as amended:

Claim 40 tracks claim 1 in system format and is distinguishable from Miller in view of Roca/Mordelet and Adamson/Macker on the same basis as claim 1.

Withdrawal of the rejection of claim 21 under 35 USC 103(a) thereof are requested.

4. Dependent Claims 2- 20

Claims 2-20 depend from and further limit claim 1 and are patentable over the cited art on the same basis as claim 1. Specifically:

a) Claims 2 -4 have been amended to further describe acknowledgements or re-transmissions from both the sending device and another receiver, which are not described in the cited art for the reasons indicated in the consideration of claim 1, above.

b) Claim 10 describes forward error coding in sender/receiver transmission and re-transmission, which is not described in the cited art

c) Claims 5-9 and 11, 12 -14 and 16-20 have been rejected on Miller at column 4, line 50 through column 5, line 39 describing a "round" or "pass"as suggesting the specific elements of the rejected claims. The cited art does not conform to MPEP 2131 by the failure of the cited art to describe " each and every element as set forth in the claim ...., either expressly or inherently ....." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The Examiner has not identified in the cited text where each and every element of the claims are described in the cited art.

Accordingly, the rejection of claims 5-9 and 11, 12 -14 and 16-20 is improper and should be withdrawn.

d) Claim 13 depends from and further limits claim 1 and is patentable over the cited art on the same basis as claim 1.

e) Claims 15:

There is no disclosure in the cited text related to bi-directional or uplink simplex protocol. Accordingly the rejection of claim 15 is improper for the failure of the cited art to disclose the elements of the claimed subject matter.

5. Dependent Claims 22-39:

Dependent claims 22-39 track dependent claims 2-20 and are distinguishable from the cited art for the same reasons indicated for claims 2-20.

6. Dependent Claims 41-57:

Dependent claims 41-57 track dependent claims 2-20 and are distinguishable from the cited art for the same reasons indicated for claims 2-20.

B. Claims 58, 59, 60, 61 and 63 have been rejected under 35 USC 102 (b) as unpatentable over USP 6,141,785 to C. H. Hur, issued October 31, 2000, filed September 2, 1998, of record (Hereafter, Hur) in view of Roca and Mordelet, of record. .

1. Claim 58, as amended, includes elements, as follows:

(i) at least one processor for determining missing or mangled data in a data transmission sent by a sending device for multiple data rates and multiple layers using Asynchronous Layered Coding (ALC) with congestion control and Forward Error Coding (FEC);.

The Examiner cites Hur at column 4, lines 39-42 as describing the claim element (i). The cited text discloses a check sum approach to identify missing packets using sequence numbers.

In contrast, applicant discloses ALC for identifying missing packets The sender side of ALC consists of generating packets based on objects to be delivered within the session and sending the appropriately formatted packets at the appropriate rates to the channels associated with the session. The receiver side of ALC consists of joining appropriate channels associated with the session, performing congestion control by adjusting the set of joined channels associated with the session in response to detected congestion, and using the packets to reliably reconstruct objects. All information flow in an ALC session is in the form of data packets sent by a single sender to channels that receivers join to receive data.

The check sum approach of Hur does not suggest or equate to the ALC approach of applicant in identifying missing or mangled packets for multiple rates and multiple layers.

(ii) a negative acknowledgement (NACK) and transmission mechanism for sending an acknowledgement or transmission of missing and mangled data to said sending device ~~or~~ and to another receiving device with FEC for repair of damaged packets or packets that have not been received;

The Examiner cites Hur at column 6, lines 54-63 as describing the claim element (ii). The cited text discloses a receiver issues a NACK to an IP multicast server group and either the host server or another host in the group re-transmit the missing or mangled data to the receiver. In contrast, applicant discloses in Paragraph 0060 and 0064 a receiver sends Knacks to the server and other receivers, not other servers in an IP multicast group.

The cited text does not disclose element (ii) for the reason indicated above

(iii) transmitting a retransmission of said missing or mangled data from said sending device and/or said other receiving device in the same or different networks to complete the data packet and a data transmission session;

The Examiner cites Hue at column 3, lines 29-57; column 6, lines 54-63; and column 7, lines 20-34 as describing claim element (iii). All of the cited text describe a Host or another Host in an IP multicast group of host providing the missing packet. In contrast, applicants disclose in applicants' specification at Paragraphs 0060 and 0064 other receivers receiving NACK and providing the missing or replacing mangled packets.

The cited text does not disclose element (iii) for the reason indicated above.

(iv) a memory including a processor, operating system and application programs for and storing the data transmission from the sending device or other receiving device.

The Examiner cites column 6, line 60 through column 7, line 2 as describing claim element (iv). The cited text discloses the hosts in the IPmulticast group having buffers to carry out the re-transmission process. There is no disclosure in the cited text of a Processor –in – Memory as described in applicants' specification at Paragraph 0077 and shown in Figure 10.

The Examiner cites Roca and Mordelet as providing the missing features in claim elements (i), (ii) and (iii). For the reasons indicated in the consideration of Claim 1, above, the cited publication does not disclose (1) using ALC to determine missing packets in multiple rates; (2) sending an acknowledgement to a sender and to another receiver, and (3) sending a retransmission from a sender and/or another receiver,

The Examiner cites Roca and Mordelet at section 6.1 and 6.2 as describing a Processor-in- Memory. The cited text describes a Multicast Library and a recursive multicast

file transfer tool (FCAST)(6.1) and test methodology (6.2), neither of which describe a Processor-in-Memory shown in Figure 10 of applicants' specification.

Summarizing, Roca and Mordelet do not supply the missing features in Hur by failing to describe (1) missing or mangled packets for multiple rates and multiple layers; (2) transmitting NACKS to hosts and other receivers; (3) re-transmitting missing packets from hosts and/or other receiver and (4) a processor in a memory.

The rejection of claim 58 under 35 USC 103(a) is without support in the cited art and allowance of claim 58 is requested.

2. Dependent claims 59-64

Dependent claims 59-62 correspond to claims 2-4, 10, respectively and are distinguishable from the cited art on the same basis as claims 2, 4, 10.

Claims 63 and 64 depend from and further limit claim 58 and are patentable over the cited art on the same basis as claim 58.

CONCLUSION

Applicant has amended the claims to further distinguish the cited art from the claimed subject matter. No new matter has been included. Entry of the amendment; allowance of the claims and passage to issue of the application are requested.

AUTHORIZATION

The Commissioner is hereby authorized to charge any additional fees which may be required for consideration of this Amendment to Deposit Account No. 13-4500, Order No. 4208-4172.

In the event that an extension of time is required, or which may be required in addition to that requested in a petition for an extension of time, the Commissioner is requested to grant a petition for that extension of time which is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to Deposit Account No. 13-4500, Order No. 4208-4172.

Respectfully submitted,
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